(1390 REV. 5-93) US DEPT. OF COMMERCE PATENT & TRADEMARK OFFICE	ATTORNEY'S DOCKET NUMBER 109870

TRANSMITTAL LETTER TO THE UNITED STATES DESIGNATED/ELECTED OFFICE (DO/EO/US) CONCERNING A FILING UNDER 35 U.S.C. 371	U.S. APPLICATION NO. (if known, sec 37 C.F.R.1.5) 09/868465

INTERNATIONAL APPLICATION NO. PCT/DK00/00005	INTERNATIONAL FILING DATE January 7, 2000	PRIORITY DATE CLAIMED January 7, 1999

TITLE OF INVENTION
A CONTROL DEVICE FOR A COMPUTER, USE OF A CONTROL DEVICE, A COMPUTER COMPRISING A CONTROL DEVICE, AND A METHOD OF CONNECTING AND DISCONNECTING UNITS IN A COMPUTER

APPLICANT FOR DO/EO/US
Rene NORTUNG

Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.

2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.

3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39(1).

4. ☐ A proper Demand for International Preliminary Examination was made by the 19th month from the earliest claimed priority date.

5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
    a. ☐ is transmitted herewith (required only if not transmitted by the International Bureau).
    b. ☒ has been transmitted by the International Bureau.
    c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US)

6. ☒ A translation of the International Application into English (35 U.S.C. 371(c)(2)).

7. ☐ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3))
    a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
    b. ☐ have been transmitted by the International Bureau.
    c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
    d. ☐ have not been made and will not be made.

8. ☐ A translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).

9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).

10. ☐ A translation of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

Items 11. to 16. below concern other document(s) or information included:

11. ☐ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.

12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.

13. ☒ A FIRST preliminary amendment.

    ☐ A SECOND or SUBSEQUENT preliminary amendment.

14. ☐ A substitute specification.

15. ☒ Entitlement to small entity status is hereby asserted.

16. ☒ Other items or information: Submission of the annexes to the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371 (c)(5)).

U.S. APPLICATION NO. (if known, see 37 C.F.R. 1.5) 09/868465	INTERNATIONAL APPLICATION NO. PCT/DK00/00005	ATTORNEY'S DOCKET NUMBER 109870

17. ☒ The following fees are submitted:	CALCULATIONS	PTO USE ONLY

Basic National fee (37 CFR 1.492(a)(1)-(5)):

Search Report has been prepared by the EPO or JPO $860.00

International preliminary examination fee paid to USPTO (37 CFR1.482) $690.00

No international preliminary examination fee paid to USPTO (37 CFR 1.482) but international search fee paid to USPTO (37 CFR 1.445(a)(2)) $710.00

Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO..$1,000.00

International preliminary examination fee paid to USPTO (37 CFR 1.482) and all claims satisfied provisions of PCT Article 33(2)-(4) ....$ 100.00

	CALCULATIONS	PTO USE ONLY
ENTER APPROPRIATE BASIC FEE AMOUNT =	$860.00	

Surcharge of $130.00 for furnishing the oath or declaration later than ☐ 20 ☐ 30 months from the earliest claimed priority date (37 CFR 1.492(e)).	$	

Claims	Number Filed	Number Extra	Rate		
Total Claims	18- 20 =	0	X $ 18.00	$	
Independent Claims	2- 3 =	0	X $ 80.00	$	
Multiple dependent claim(s)(if applicable)			+ $270.00	$	
TOTAL OF ABOVE CALCULATIONS =				$860.00	
Reduction by 1/2 for filing by small entity, if applicable.			-	$430.00	
SUBTOTAL =				$430.00	
Processing fee of $130.00 for furnishing the English translation later than ☐ 20 ☐ 30 month from the earliest claimed priority date (37 CFR 1.492(f)). +				$	
TOTAL NATIONAL FEE =				$430.00	
			Amount to be refunded	$	
			Charged	$	

a. ☒ Check No. 120094 in the amount of $430.00 to cover the above fees is enclosed.

b. ☐ Please charge my Deposit Account No. _____ in the amount of $_____ to cover the above fees. A duplicate copy of this sheet is enclosed.

c. ☒ The Director is hereby authorized to charge any additional fees which may be required, or credit any overpayment, to Deposit Account No. 15-0461. A duplicate copy of this sheet is enclosed.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

SEND ALL CORRESPONDENCE TO:
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Date: June 19, 2001

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(1390 Rev.10-00)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the Application of

Rene NORTUNG

Application No.: U.S. National Stage
of PCT/DK00/00005

Filed: June 19, 2001   Docket No.:   109870

For: A CONTROL DEVICE FOR A COMPUTER, USE OF A CONTROL DEVICE, A
        COMPUTER COMPRISING A CONTROL DEVICE, AND A METHOD OF
        CONNECTING AND DISCONNECTING UNITS IN A COMPUTER

PRELIMINARY AMENDMENT

Director of the U.S. Patent and Trademark Office
Washington, D. C. 20231

Sir:

        Prior to initial examination, and after entry of the annexes to the IPER, please amend

the above-identified application as followed:

IN THE CLAIMS:

        Please replace claims 4, 6-9, 11-15 and 18 as follows:

4.   (Amended) A control device according to claim 2, characterized in that one or more

of the connectors are command and control connectors, and that the control device is adapted

to establish and interrupt the interconnections by the use of the command and control

connectors.

6.   (Amended) A control device according to claim 1, characterized in that the input

device comprises a keyboard (20) by means of which the one or more codes may be supplied

to the control device.

7. (Amended) A control device according to claim 1, characterized in that the input device comprises a card-reading unit (21) by means of which the one or more codes may be supplied to the control device.

8. (Amended) A control device according to claim 1, characterized by comprising a device adapted to ensure that the specification of the relation between the codes and the states is allowed only after the submission of a predefined code.

9. (Amended) A control device according to claim 2, characterized in that it comprises a supervisory unit (35) which is adapted to currently supervise contact with one or more of the units both before, during and after the first start and re-start, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

11. (Amended) A control device according to claim 9, characterized in that the supervisory unit is adapted to perform measurement of operational data, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

12. (Amended) A control device according to claim 9, characterized in that it is enclosed by a cabinet, and that the supervisory device comprises means adapted to currently determine whether the cabinet has been opened, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

13. (Amended) A control device according to claim 1, characterized in that the supervisory device comprises a timer device, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

14. (Amended) A control device according to claim 1, characterized by comprising an output device which is adapted to show information on the current state of the computer.

15. (Amended) A control device according to claim 1, characterized in that it comprises one or more measuring devices adapted to measuring external influences, such as

temperature, air humidity and vibrations, and that the control device is adapted, on the basis

of this, to select the state in which the computer is to operate.

18.   (Amended) Use of a control device according to claim 1 in connection with a

personal computer.

REMARKS

Claims 1-18 are pending. By this Preliminary Amendment, claims 4, 6-9, 11-15 and

18 are amended to eliminate multiple dependencies. Prompt and favorable examination on

the merits is respectfully requested.

The attached Appendix includes marked-up copies of each rewritten claim (37 C.F.R.

1.121(c)(1)(ii)).

Respectfully submitted,

James A. Oliff
Registration No. 27,075

Thomas J. Pardini
Registration No. 30,411

JAO:TJP/cmm

Attachment:
    Appendix

Date: June 19, 2001

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DEPOSIT ACCOUNT USE
AUTHORIZATION
Please grant any extension
necessary for entry;
Charge any fee due to our
Deposit Account No. 15-0461

APPENDIX

Changes to Claims:

The following are marked-up versions of the amended claims:

4. (Amended) A control device according to claim 2 ~~or 3~~, characterized in that one or more of the connectors are command and control connectors, and that the control device is adapted to establish and interrupt the interconnections by the use of the command and control connectors.

6. (Amended) A control device according to ~~one or more of the preceding claims,~~ claim 1, characterized in that the input device comprises a keyboard (20) by means of which the one or more codes may be supplied to the control device.

7. (Amended) A control device according to ~~one or more of the preceding claims,~~ claim 1, characterized in that the input device comprises a card-reading unit (21) by means of which the one or more codes may be supplied to the control device.

8. (Amended) A control device according to ~~one or more of the preceding claims,~~ claim 1, characterized by comprising a device adapted to ensure that the specification of the relation between the codes and the states is allowed only after the submission of a predefined code.

9. (Amended) A control device according to ~~one or more of claims 2-8,~~ claim 2, characterized in that it comprises a supervisory unit (35) which is adapted to currently supervise contact with one or more of the units both before, during and after the first start and re-start, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

11. (Amended) A control device according to claim 9 ~~or 10~~, characterized in that the supervisory unit is adapted to perform measurement of operational data, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

12.   (Amended) A control device according to ~~one or more of claims 9-11,~~ claim 9,

characterized in that it is enclosed by a cabinet, and that the supervisory device comprises

means adapted to currently determine whether the cabinet has been opened, and that the

control device is adapted, on the basis of this, to select the state in which the computer is to

operate.

13.   (Amended) A control device according to ~~one or more of the preceding claims,~~ claim

1, characterized in that the supervisory device comprises a timer device, and that the control

device is adapted, on the basis of this, to select the state in which the computer is to operate.

14.   (Amended) A control device according to ~~one or more of the preceding claims,~~ claim

1, characterized by comprising an output device which is adapted to show information on the

current state of the computer.

15.   (Amended) A control device according to ~~one or more of the preceding claims,~~ claim

1, characterized in that it comprises one or more measuring devices adapted to measuring

external influences, such as temperature, air humidity and vibrations, and that the control

device is adapted, on the basis of this, to select the state in which the computer is to operate.

18.   (Amended) Use of a control device according to ~~one or more of claims 1-15~~ claim 1,

in connection with a personal computer.

A control device for a computer, use of a control device,
a computer comprising a control device, and a method of
connecting and disconnecting units in a computer

5   The invention relates to a control device for a computer.

It is well-known that computers are typically composed of
a plurality of units, such as floppy disk drives, hard
disks, modems, network connections and graphical accel-
10   erator cards. It is of interest in this connection to be
able to cause the computer to operate in several differ-
ent states where units are connected and disconnected in
dependence on the selected state. It is e.g. desirable
that access to a unit is allowed in a first state, while
15   this access is not allowed in a second state. This may
inter alia be desirable in order to secure personal data
on the hard disk of a computer which is used by several
users. This security can e.g. comprise security against
unintentional destruction of personal data as well as se-
20   curity against spreading of virus between units in the
computer.

It is therefore of interest to provide a control device
for computers with one or more units where the computer
·25   can operate in at least two states, and where the control
device is adapted to connect and disconnect the units in
dependence on the state in which the computer is to oper-
ate.

30   US 5 434 562 describes a control device for a computer
with one or more units. The control device comprises
switch devices which the user can switch between various
positions. The position of the switch determines the ac-
cess to a given unit. For example, in a first position
35   the switch can interrupt the data connections to a hard

disk, while in a second state it can establish the data connections.

It is an object of the invention to provide a control de-
5   vice of the above-mentioned type which makes it possible to bring the computer into one of a number of specified states in a simple manner, which reduces the risk of the user bringing the computer into an undesired state among said number of states, and which can ensure optimum re-
10 source allocation in that the state is e.g. adapted to the user's needs.

This object is achieved according to the invention in that the control device comprises an input device by
15 means of which one or more codes may be supplied to the control device, and means which specify a relation be-tween codes and said states, and which are adapted, on the basis of this, to select the state in which the com-puter is to operate before the computer is connected to a
20 power supply and is configured.

This ensures that the control device can make a state-specific allocation of resources so that the computer may be optimized for various tasks in various states. Alloca-
25 tion of resources takes place before the computer is con-nected to the power supply. This means that e.g. data which must be accessible in some states may be secured in other states. This is desirable e.g. when a computer is used by several users and for securing selected parts of
30 the computer against computer virus. For example, it is not possible to use the computer for changing a pre-allo-cated state. In addition, the important advantage is achieved that it is possible to prevent a change in said specified relation between codes and said states from the
35 computer. This is made possible in that the control de-vice determines states in which the computer is to oper-

ate before the computer is supplied with current and can
be started. Thus, undesired access to the control device
is prevented.

5   The control device according to the invention gives the
further advantage that it is simple to use in connection
with computers having many units and which is desirably
used in several different states.

10   Another embodiment is characterized in that said units
comprise one or more mass storage units. This enables se-
curity of data in given states.

In a preferred embodiment, the control device comprises
15   one or more connections to one or more of said units, and
the control device is adapted to perform said connection
and disconnection by the use of said connections.

In a particularly preferred embodiment one or more of
20   said connections are data connections, and the control
device is adapted to perform said connection and discon-
nection by making and breaking said data connections.

In a second particularly preferred embodiment, one or
25   more of said connections are command and control connec-
tions, and the control device is adapted to perform said
connection and disconnection by affecting said command
and control connections.

30   In a third particularly preferred embodiment, one or more
of said connections are current connections, and the con-
trol device is adapted to perform said connection and
disconnection by making and breaking said current connec-
tions.

35

In an embodiment, the input device comprises a keyboard
by means of which said one or more codes may be supplied
to the control device. This ensures that a user can de-
fine a code easily and simply, and the risk of bringing
5   the computer into an undesired state is minimized hereby.

In still another embodiment, the input device comprises a
card reading unit by means of which said one or more
codes may be supplied to the control device. This pro-
10   vides the advantage that unique identification of the
user may be performed in a simple manner if cards con-
taining user-specific card codes are used.

In a further embodiment, the control device comprises a
15   device to ensure that said specification of the relation
between said codes and said states is allowed only after
the submission of a given code. This provides security
against undesired change of said states, as only selected
users can make changes of said specification.
20

In an expedient embodiment the control device comprises a
supervisory unit which is adapted to currently supervise
contact with one or more of said units, and the control
device is adapted, on the basis of this, to select the
25   state in which the computer is to operate. The state may
thus be selected both before, during and after the first
start and re-start of the computer. This ensures that a
user cannot intentionally or unintentionally e.g. switch
the connection to various peripheral units and hereby ob-
30   tain unauthorized access to one or more of these units.

Claims 10-15 define further advantageous embodiments of
the control device according to the invention.

35   The invention also relates to a computer comprising a
control device, said computer comprising one or more

units, said computer being capable of operating in at least two states, said control device being adapted to connect and disconnect said units in dependence on the state in which the computer is to operate, said control

5 device additionally comprising an input device by means of which one or more codes may be supplied to the control device, and means which specify a relation between codes and said states, and which are adapted, on the basis of this, to select the state in which the computer is to op-

10 erate.

In a preferred embodiment, said units comprise a control unit.

15 The invention additionally relates to a method of connecting and disconnecting units in a computer which can operate in at least two states, said connection and disconnection being performed in dependence on the state in which the computer is to operate, wherein the state in

20 which the computer is to operate is selected on the basis of one or more supplied codes and a specified relation between codes and said states.

Finally, the invention relates to the use of a control
25 device in connection with a personal computer.

The invention will now be described more fully below with reference to the drawing, in which

30 figure 1 illustrates an embodiment of a computer with a control device according to the invention,

fig. 2 shows an embodiment of a control device according to the invention, and

35

figure 3 shows a further embodiment of a control device according to the invention.

A preferred embodiment of a control device according to the invention will be described below. It should be mentioned, however, that a control device according to the invention may be implemented in several ways, the one illustrated below being just one of these. As the invention relates to a control device for a computer as well as a computer with a control device of this type, a description will be given below of a control device 1 according to the invention and a computer comprising a control device 1 according to the invention, respectively. In the embodiment shown, the control device 1 is incorporated in a computer 19.

The computer comprises a plurality of units: a motherboard 4, one or more mass storage devices, a power supply 11, and one or more transmission devices 9. The motherboard or base card 4 is connected to the control device 1 via a plurality of connections 5A, 5B, 6. The connection 5A may e.g. be a data connection which may be used for data transfer between the base card 4 and the control device 1, while the connection 5B may e.g. be a command and control connection so that the control device can command and control the base card 4. The connection 6 illustrates a current connection between the control device 1 and the base card 4. This connection 6 may be used for supplying the base card 4 with current.

The control device 1 is likewise connected to the power supply 11 via the power connection 10, which is adapted to feed a current from the power supply 11 to the control device 1. As mentioned, the units in the computer also comprise one or more mass storage devices. In the embodiment shown, these mass storage devices comprise: a hard

disk 7, a CD-ROM drive 8 and a floppy disk drive 18. It should be mentioned, however, that many different mass storage devices may be used in this connection. In addition to hard disk, floppy disk drive and CD-ROM drive,

5   mention may be made of e.g.: ZIP drive, SyQuest drive, MO drive, band stations, RAM cards, RAM disks.

In the same manner as the control device 1 was connected to the base card 4 by a plurality of connections, the
10   control device is connected to the other units. In the example shown, the control device 1 is connected to the hard disk 7 via the connections 3A and 12A. The connection 3A illustrates a power connection which is adapted to feed current from the control device 1 to the hard
15   disk 7. The connection 12A illustrates a data connection which is adapted to carry data to and from the control device 1 and the hard disk 7. In the example shown, there are thus just two connections 3A, 12A between the control device 1 and the hard disk 7, but a larger number of con-
20   nections might be present of course, e.g. there might be a number of control and command connections between the control device 1 and the hard disk 7 so that the control device 1 could control the function of the hard disk. These connections, however, are not shown in the present
25   case.

Correspondingly, the control device 1 is connected to the other mass storage devices. Thus, there are connections between the control device 1 and the CD-ROM drive 8, and
30   in the example shown the connection 3B illustrates a command and control connection, whereby the control device can command and control the function of the CD-ROM drive 8. The connection 12B illustrates a power connection which is adapted to supply the CD-ROM drive 8 with cur-
35   rent. The floppy disk drive 18 is likewise connected to the control device 1 by a plurality of connections. In

this case, too, two connections are shown, even though
any number of connections may be provided between these
units of course, and the connection 3D illustrates a data
connection, while a command and control connection is il-
5   lustrated by the connection 12D.

Finally, the units of the computer comprise a transmis-
sion device 9 which, like the other units, is connected
to the control device 1. Like for the other units, the
10   connections between the control device 1 and the trans-
mission device 9 illustrate that a plurality of different
connections may be provided between these. For example,
the connection 3C may conceivably be a power connection,
while the connection 12C may illustrate a data connec-
15   tion.

It should be noted that even though all the units in the
example shown are connected to the control device 1, the
computer may of course also contain a plurality of units
20   which are not connected to the control device, but which
operate by having a direct connection to one or more
other units in the computer 19. Such units, however, are
not illustrated in the figure, since these are not spe-
cially relevant relative to the invention.

25
As will appear from the figure, the control device 1 is
thus connected to a plurality of the units of the com-
puter. The control device is arranged such that it can
connect and disconnect the units in such a manner that a
30   connected unit may be caused to connect to another con-
nected unit, and so that disconnection of a unit can pre-
vent other units from contacting this unit. The computer
19 is adapted to operate in at least two states, and the
control unit 1 is adapted to connect and disconnect the
35   units in dependence on the state in which the computer is
to operate. For example, it is conceivable that in a

given state the computer does not allow access to the
hard disk 7. In this situation, the control device 1 may
thus disconnect the unit 7, while units that should de-
sirably be accessible to other units in the computer are
5   connected before start.

As will be described below, the control device 1 is ar-
ranged such that one or more codes may be supplied to it,
and the control device 1 comprises means which specify
10 the relation between codes and said states. These means
are adapted to select the state in which the computer is
to operate on the basis of the given code.

The control device 1 can thus cause the computer to as-
15 sume a plurality of states on the basis of one or more
supplied codes. By connecting a large number of units to
the control device it is thus possible to specify a large
number of states in which the computer can operate, and
by allowing the control device to be connected to the
20 base card 4 it is e.g. also possible to disconnect the
base card 4 and thereby prevent the computer from func-
tioning. This may e.g. be utilized in the situation where
the supplied code or codes are not accepted by the con-
trol device. These conditions will be described more
25 fully below.

It may moreover be mentioned that the computer 19 may
comprise a cabinet 2 in which one or more of said units
are incorporated. In the case shown, the cabinet 2 thus
30 encloses all the units of the computer and the control
device 1.

As will appear from the figure, the computer 19 comprises
a cabinet 2. In a particularly expedient embodiment, the
35 control device 1 is adapted to detect whether the cabinet
2 has been opened and, on the basis of this, to select

the state in which the computer or the PC operates, e.g.
by causing the PC or parts thereof to assume a locked
state so that this/these cannot be used directly. This
may be implemented in that the control device is con-
5   nected to a mechanical contact 43 in the PC. The contact
43 is activated by starting the PC. By allowing the unit
to be driven by its own power supply, e.g. a battery, it
is ensured that this detection may be performed even when
the PC is turned off. Unwarranted access causes a signal
10   to be applied to the control device 1 which can then
block all or selected units. The power supply to the PC
may be interrupted hereby. The administrator has to start
the PC again. In an expedient embodiment, the cabinet 2
may be locked.

15

Figure 2 illustrates a possible structure of a control
device 1 according to the invention. The control device
comprises input devices 20 and 21, means 24 specifying a
relation between codes and states, and means 32 adapted
20   to connect and disconnect units. As will appear from the
figure, the means 32 have a plurality of connections
which are numbered corresponding to the connections in
figure 1. These connections are contemplated to establish
connections between the means 32 and various units in the
25   computer 19.

As mentioned before, the control device 1 is adapted to
connect and disconnect a plurality of coupled units. This
connection and disconnection is performed in the example
30   shown by using the means 32, which are adapted to perform
this connection and disconnection by using the supplied
connections. In the case where a connection is a data
connection, this connection and disconnection may be per-
formed by the means 32 by making or breaking said data
35   connections, e.g. by using a switch, a relay or the like.
In the case where said connections are command and con-

trol connections, the connection and disconnection may be performed by affecting selected command and control connections in a suitable manner. For example, a state which just allows reading of data from a mass storage device
5   may be achieved in that the control device 1 feeds a read only signal to the mass storage device concerned. Corresponding connection and disconnection of units may be performed by using other suitable control and command signals, such as M/B, reset and device enable of the sys-
10   tem.

As will appear from the figure, the input devices 20 and 21 are connected to the means 24 which specify a relation between codes and states. This allows a user to allocate
15   one or more codes to the means 24 e.g. by using the keyboard 20, by using a card reader 21, or by a combination of these. On the basis of the supplied code, the means 24 may indicate a state, and by feeding the information on this state to the means 32, these means 32 may be caused
20   to perform the connection or disconnection corresponding to the desired state.

Many different input devices may be used of course. The keyboard 20 may thus be implemented in several known ways
25   and may e.g. be a numeric keyboard, alphanumeric keyboard, both numeric and alphanumeric keyboard, etc. Correspondingly, the card read input device 21 may be implemented in different known ways, e.g. as one which is a magnetic card reader, a chip card reader or any other
30   card that can contain the necessary code. It is additionally noted that other types of input devices may be used of course. Among many possible options it may e.g. be mentioned that finger-prints, face recognition and voice recognition are used in connection with personal recogni-
35   tion, and that, on the basis of this, the control unit 1

can select a person-specific state in which the computer
is to operate.

It is noted that there are also several ways in which a
5   user may be required to indicate one or more codes. It
may e.g. be expedient to combine said input devices by
entering these codes. For example, a user identification
may be made in three stages: a code from a smart card
reader 21, a PIN code entered via the keyboard 20, and
10   the use of EPROM containing a unique number of the con-
trol device. These three numbers together will provide a
high certainty of the user's physical presence at a given
time and a given computer.

15   It is e.g. conceivable that a computer is used jointly by
two users, and that each user is therefore given a code
which specifies the desired state in which the computer
is to operate when this user uses the computer. This may
be described by the following example.
20

Several users may use the same machine with different
rights and set-ups, there being used dedicated hardware
for the individual user. For example, the same users may
run different risks e.g. with respect to virus on various
25   hardware configurations. Correspondingly, use of several
operating systems in the same computer are made possible
in a simple manner. Additionally, it may be ensured that
a user's software does not destroy another user's set-up
or data, such as e.g. the son's games or the father's ac-
30   counts.

As will appear from the figure, the control device 1 also
comprises a supervisory unit 35. This supervisory unit 35
may e.g. be adapted to currently supervise contact with
35   one or more of the connected units, and is adapted, on
the basis of this, to select the state in which the com-

puter operates. This ensures that it is possible to re-
cord when a unit is connected or disconnected and option-
ally store relevant information on this, e.g. time, the
change made and subsequent acts. On this basis, the con-
5   trol unit 1 can determine the state in which the computer
is to operate, e.g. that it must be brought into a locked
state where further use is not readily possible for a
user without special system rights. The various condi-
tions in connection with modem, network card and ISDN
10 adapter will be described below.

Modem. In connection with a connected modem the control
device expediently uses a modem control unit. This modem
is adapted to be disconnected or connected according to
15 user ID and user set-up determined by administrator. The
modem control device is an electronic unit that inter-
rupts the line physically in the modem before ring detec-
tion. Hereby, the modem cannot be controlled through the
line. This ensures that modem set-up is controlled ac-
20 cording to user ID and set-up. Also provided is a sensor
circuit for measuring whether the telephone line has been
interrupted as a safeguard against switching of connec-
tions to external networks (unintentional change bypass-
ing ID). This takes place by measuring the line voltage.
25

Network card. It is adapted to be disconnected or con-
nected according to user ID and user set-up determined by
administrator. Also provided is a sensor circuit for
measuring whether the network line (UTP) has been inter-
30 rupted as a safeguard against switching of connections to
external networks (unintentional change bypassing ID). A
sensor circuit measures the presence of connec-
tion/disconnection of a network connecting line (patch
cable). Furthermore, the link signal is also read in
35 standby (only mains voltage on the power supply). This is
a security for the network administrator that a user or

others do not malevolently or unintentionally switch the
network connections. In case of interruptions or switch-
ing of networks, the unit locks the machine and all hard-
ware is interrupted until a valid condition of access

5   (smart card, password, etc.) has been satisfied. The set-
up determines who has administrator rights.

ISDN adapter. It is adapted to be disconnected or con-
nected according to user ID and user set-up determined by

10   administrator. Also provided is a stimulation/sensor cir-
cuit for measuring whether the ISDN connection has been
interrupted as a safeguard against switching of connec-
tions to external networks (unintentional change bypass-
ing ID). This is a security for the network administrator

15   that a user or others do not malevolently or unintention-
ally switch network connections. In case of interruptions
or switching of ISDN the unit locks the machine and all
hardware is interrupted until the condition of access
(smart card, password, etc.) has been satisfied. The set-

20   up determines who has administrator rights.

As will appear from figure 2, the control device 1 com-
prises a cabinet 50. In the same manner as described in
connection with the cabinet 2 of the computer, the con-

25   trol device may be adapted to select the state in which
the computer is to operate on the basis of information on
whether the cabinet has been opened.

Although it is not shown directly in figure 2, a control

30   device 1 will expediently be based on a control unit
which performs said control of the units of the computer
in cooperation with the other parts of the control device
1. This is described more fully in connection with figure
3.

35

Figure 3 shows a simple example of how the control device
may conceivably be built. The control device comprises a
control unit 31 which may be a normal CPU, a ROM 61 that
can contain a program code and static data, as well as a

5   RAM 62 that may be used in a known manner as a data stor-
age which may be changed currently. These units may e.g.
be connected to a data/control bus 63, just as the other
units of the control device 1 may be connected to this
bus 63. As will appear from the figure, a control unit 1

10   will thus be in the form of a normal computer in this em-
bodiment, and in this situation the control device is
thus basically built as a PC which may be incorporated in
another computer so that the control device 1 can connect
and disconnect units in the computer 19 depending on the

15   state thereof.

That the control device 1 may be built as an independent
PC in the computer 19 gives a number of advantages. For
example, it provides the possibility of using the control

20   device 1 for independent work on the Internet. The advan-
tage of this property is that, without any risk of
spreading of virus from the network, a user can be on the
Internet simultaneously with local networks without hav-
ing to re-start the PC.

25

Thus, in addition to providing the possibility of con-
trolling rights at hardware level, the control device 1
also provides the possibility of using state-specific
user interfaces. It should be stressed that the control

30   unit 1 may be implemented in several ways, but as an
example it may be mentioned that this may conceivably be
constructed such that it can be built into a standard 5 ¼
inch slot in an ATX 2.01 (or higher) compatible PC, but
it may also conceivably be connected in a suitable manner

35   to any other computer.

When the means 24 specifying a relation between codes and
states are stored in a non-volatile memory, it is ensured
that these rights can be specified only by a selected
person, e.g. a system administrator who has special ac-
5   cess to these, e.g. by being allowed to use the computer
in a state which gives both read and write rights to the
means 24.

In an embodiment, the control device 1 comprises a super-
10   visory unit 35 which is connected to one or more connec-
tions to the peripheral units of the computer 19. This is
particularly expedient when the supervisory unit is con-
nected to peripheral units which it is possible to iden-
tify. Hereby, security may be obtained e.g. against
15   switching of connections to units, e.g. connections to
external networks.

In a further embodiment, the supervisory unit 35 com-
prises a measuring device 42 which is connected to the
20   means 32. The measuring device is adapted to perform
measurement of operational data, such as air humidity,
temperature, shakes/vibrations, current, voltage and ef-
fect at suitable places in the computer, and, on the ba-
sis of this, the control device 1 is adapted to select
25   the state in which the computer operates. Operational
voltages are measured e.g. on power supply and peripheral
units. The power consumption is determined e.g. on the
basis of current/voltage measurements on units and in to-
tal from the power supply.
30

This protects against damage to units because of unac-
ceptable "operational data", e.g. when a given specified
threshold value is exceeded.

35   In a further expedient embodiment, the supervisory unit
35 comprises a timer 41 which may likewise be connected

to the means 32. The timer or the clock 41 may e.g. be
used for measuring the total amount of time which a given
user has used the computer or selected units, such as mo-
dem or other, but may also be used for ensuring that the
5   computer can only be used for given purposes at given
points in time by given users. This control may be per-
formed in that the clock 41 is e.g. connected to the
means 32 which perform suitable disconnection of units on
the basis of information from the clock.

10

It is noted that the figures are schematic and simplified
for clarity, and they just show details which are essen-
tial to the understanding of the invention, while other
details are omitted. The same reference numerals have
15   been used throughout for identical or corresponding
parts.

Some examples of embodiments of a control device accord-
ing to the invention and a computer with a circuit ac-
20   cording to the invention have been shown in the forego-
ing. It should be stressed, however, that the invention
is not restricted to the embodiments shown, but may be
embodied in other ways within the subject-matter defined
in the following claims. For example, the control device
25   1 may comprise an output device, such as an LCD display
or a conventional screen. This ensures that the control
device can provide the user with various items of infor-
mation. However, the control unit may also be connected
to the screen of the computers and be adapted to provide
30   the user with information via the screen.

Claims:

1. A control device (1) for use with a computer (2),

5   the computer having a motherboard (4) and one or more units (7, 8, 9, 18), and a power supply unit (11) for supplying electrical power to the motherboard and to the one or more units, and electrical interconnections (3A, 3B, 3C, 3D, 6, 5A, 5B, 12A, 12B, 12C, 12D, 10) for inter-connecting the motherboard, the one or more units and the

10   power supply unit, the computer being capable of operat-ing in at least a first state, in which a first group of the one or more units are operable, and in a second state, in which a second group of the one or more units are operable,

15   the control device being adapted, in dependence on the state in which the computer is to operate, to establish selected ones of the electrical interconnections so as to make corresponding units operable, and to interrupt selected ones of the electrical interconnections so as to

20   make corresponding units inoperable,

c h a r a c t e r i z e d in that the control device comprises an input device (20, 21) by means of which one or more codes may be supplied to the control device, and means (24) which specify a relation between codes and the

25   states, and which is adapted, on the basis of codes re-ceived through the input device and of the relation be-tween codes and the states, to select a state in which the computer is to operate and to establish the electri-cal interconnections to the group of units to be operable

30   in the selected state, and following this, and before the computer is configured, to establish the electrical

19

interconnection (6) between the power supply unit and the motherboard.

2. A control device according to claim 1, c h a r a c -
t e r i z e d in that it comprises one or more connec-
5 tors for one or more of the units, and that the control
device is adapted to establish and interrupt the inter-
connections by the use of the connectors.

3. A control device according to claim 2, c h a r a c -
t e r i z e d in that one or more of the connectors are
10 data connectors, and that the control device is adapted
to establish and interrupt the interconnections by the
use of the data connectors.

4. A control device according to claim 2 or 3, c h a r -
a c t e r i z e d in that one or more of the connectors
15 are command and control connectors, and that the control
device is adapted to establish and interrupt the inter-
connections by the use of the command and control
connectors.

5. A control device according to claim 2, c h a r a c -
20 t e r i z e d in that one or more of the connectors are
power connectors, and that the control device is adapted
to establish and interrupt the interconnections by the
use of the power connectors.

6. A control device according to one or more of the pre-
25 ceding claims, c h a r a c t e r i z e d in that the
input device comprises a keyboard (20) by means of which
the one or more codes may be supplied to the control
device.

7. A control device according to one or more of the pre-
30 ceding claims, c h a r a c t e r i z e d in that the

input device comprises a card-reading unit (21) by means
of which the one or more codes may be supplied to the
control device.

8. A control device according to one or more of the pre-
5 ceding claims, c h a r a c t e r i z e d by comprising
a device adapted to ensure that the specification of the
relation between the codes and the states is allowed only
after the submission of a predefined code.

9. A control device according to one or more of claims 2-
10 8, c h a r a c t e r i z e d in that it comprises a su-
pervisory unit (35) which is adapted to currently super-
vise contact with one or more of the units both before,
during and after the first start and re-start, and that
the control device is adapted, on the basis of this, to
15 select the state in which the computer is to operate.

10. A control device according to claim 9, c h a r a c -
t e r i z e d in that the supervision comprises identi-
fication of one or more of the units.

11. A control device according to claim 9 or 10,
20 c h a r a c t e r i z e d in that the supervisory unit
is adapted to perform measurement of operational data,
and that the control device is adapted, on the basis of
this, to select the state in which the computer is to op-
erate.

25 12. A control device according to one or more of claims
9-11, c h a r a c t e r i z e d in that it is enclosed
by a cabinet, and that the supervisory device comprises
means adapted to currently determine whether the cabinet
has been opened, and that the control device is adapted,
30 on the basis of this, to select the state in which the
computer is to operate.

13. A control device according to one or more of the pre-
ceding claims, c h a r a c t e r i z e d in that the
supervisory device comprises a timer device, and that the
control device is adapted, on the basis of this, to se-

5   lect the state in which the computer is to operate.

14. A control device according to one or more of the pre-
ceding claims, c h a r a c t e r i z e d by comprising
an output device which is adapted to show information on
the current state of the computer.

10   15. A control device according to one or more of the pre-
ceding claims, c h a r a c t e r i z e d in that it
comprises one or more measuring devices adapted to meas-
ure external influences, such as temperature, air humid-
ity and vibrations, and that the control device is

15   adapted, on the basis of this, to select the state in
which the computer is to operate.

16. A computer comprising

a. motherboard (4) and one or more units (7, 8, 9, 18),
and a power supply unit (11) for supplying electrical

20   power to the motherboard and to the one or more units,
and electrical interconnections (3A, 3B, 3C, 3D, 6, 5A,
5B, 12A, 12B, 12C, 12D, 10) for interconnecting the
motherboard, the one or more units and the power supply
unit, the computer being capable of operating in at least

25   a first state, in which a first group of the one or more
units are operable, and in a second state, in which a
second group of the one or more units are operable, and

a control device adapted, in dependence on the state in
which the computer is to operate, to establish selected

30   ones of the electrical interconnections so as to make
corresponding units operable, and to interrupt selected

AMENDED SHEET

ones of the electrical interconnections so as to make corresponding units inoperable,

c h a r a c t e r i z e d in that the control device comprises an input device (20, 21) by means of which one

5   or more codes may be supplied to the control device, and means (24) which specify a relation between codes and the states, and which is adapted, on the basis of codes received through the input device and of the relation between codes and the states, to select a state in which

10   the computer is to operate and to establish the electrical interconnections to the group of units to be operable in the selected state, and following this, and before the computer is configured, to establish the electrical interconnection (6) between the power supply unit and the

15   motherboard..

17. A computer according to claim 16, c h a r a c - t e r i z e d in that a cabinet encloses the computer, and that the supervisory device comprises means adapted to currently determine whether the cabinet has been

20   opened, and that the control device is adapted, on the basis of this, to select the state in which the computer is to operate.

18. Use of a control device according to one or more of claims 1-15 in connection with a personal computer.
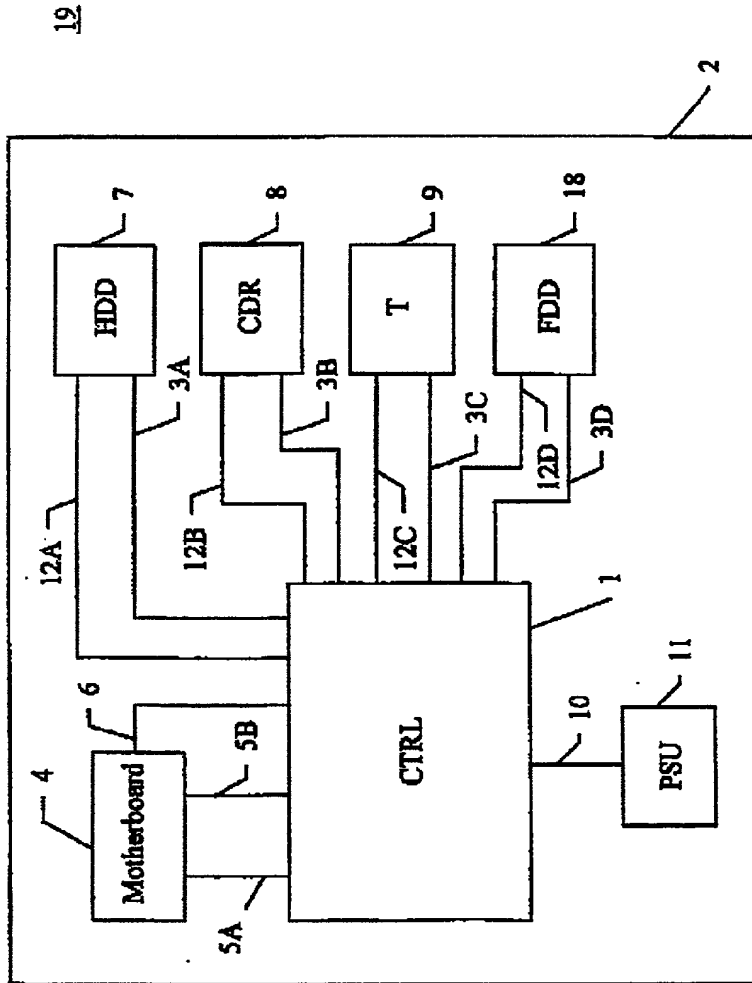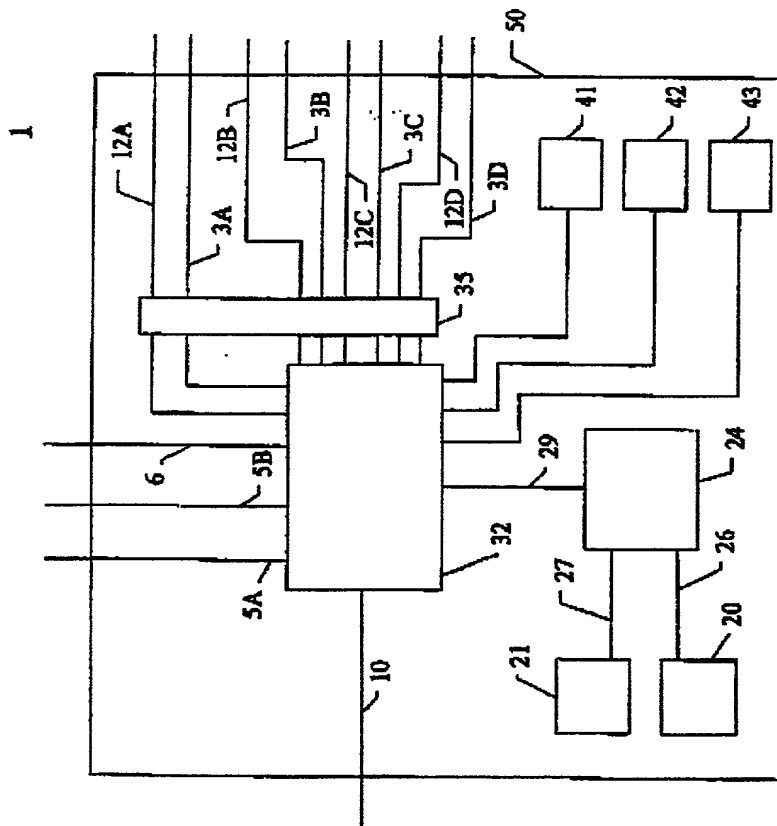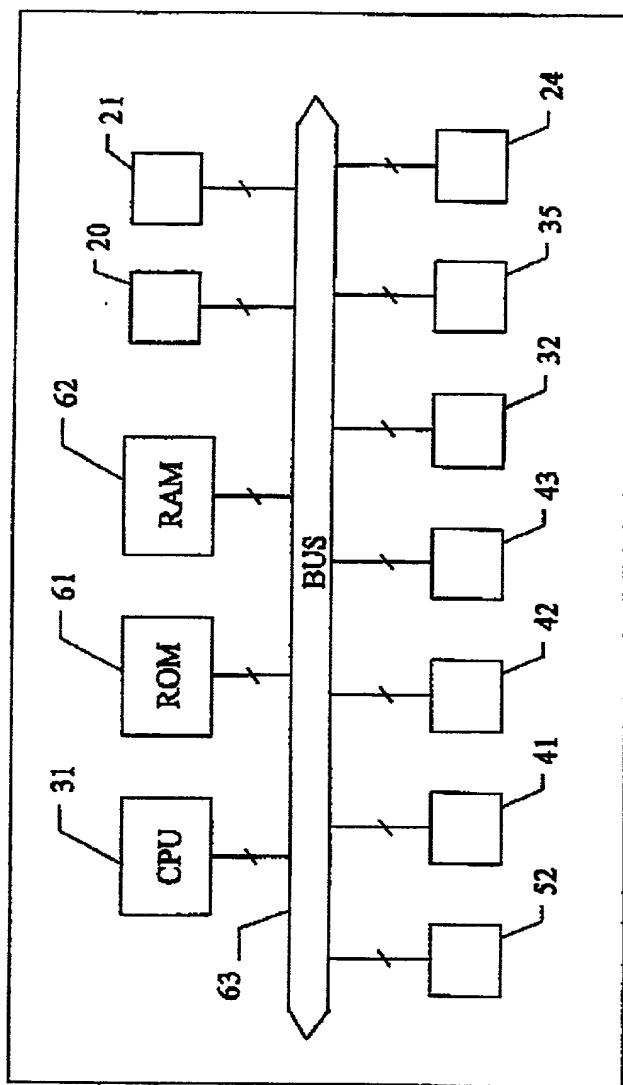
FIG. 1

FIG. 2

3/3

FIG. 3

*) A control device for a computer, use of a control device, a computer comprising
  a control device, and a method of connecting and disconnecting   Docket No.: _____
  units in a computer

DECLARATION AND POWER OF ATTORNEY
UNDER 35 USC §371(c)(4) FOR
PCT APPLICATION FOR UNITED STATES PATENT

As a below named inventor, I hereby declare that:
my residence, post office address and citizenship are as stated below under my name;

I verily believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought, namely the invention entitled: *) _____

_____
described and claimed in international application number PCT/DK00/00005 filed 7 January 2000 .
I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Office all information known to me to be material to patentability as defined in Title 37, Code of Federal Regulations §1.56.

Under Title 35, U.S. Code §119, the priority benefits of the following foreign application(s) filed within one year prior to my international application are hereby claimed:

7 January 1999 – Danish Patent Application No. PA 1999 00011

The following application(s) for patent or inventor's certificate on this invention were filed in countries foreign to the United States of America either (a) more than one year prior to my international application, or (b) before the filing date of the above-named foreign priority application(s):

I hereby appoint the following as my attorneys of record with full power of substitution and revocation to prosecute this application and to transact all business in the Patent Office:

**James A. Oliff, Reg. No. 27,075; William P. Berridge, Reg. No. 30,024;
Kirk M. Hudson, Reg. No. 27,562; Thomas J. Pardini, Reg. No. 30,411;
Edward P. Walker, Reg. No. 31,450; Robert A. Miller, Reg. No. 32,771;
Mario A. Costantino, Reg. No. 33,565; and Caroline D. Dennison, Reg. No. 34,494.**

ALL CORRESPONDENCE IN CONNECTION WITH THIS APPLICATION SHOULD BE SENT TO OLIFF & BERRIDGE, PLC, P.O. BOX 19928, ALEXANDRIA, VIRGINIA 22320, TELEPHONE (703) 836-6400.

I hereby declare that I have reviewed and understand the contents of this Declaration, and that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

1	*Typewritten Full Name of Sole or First Inventor*	René		NORTUNG
		Given Name	Middle Initial	Family Name
2	**Inventor's Signature**			
3	**Date of Signature**	July	10	2001
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Note to Inventor: Please sign name on line 2 exactly as it appears in line 1 and insert the actual date of signing on line 3.